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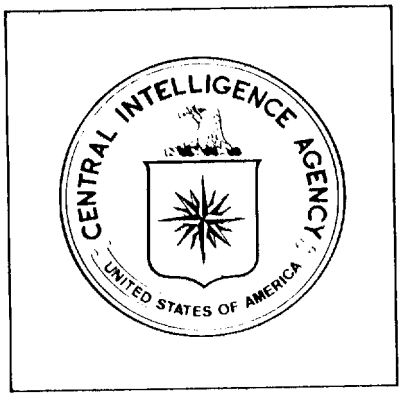

South Vietnam's Transport System

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SOUTH VIETNAM'S TRANSPORT SYSTEM

Introduction

1. This publication provides a brief overview of South Vietnam's transport system and is intended chiefly as a reference aid. Its chief findings are that unsettled political conditions since World War II have had a debilitating effect on transportation in South Vietnam, preventing development of a well-balanced, coordinated system. An improved highway network is carrying most of the freight needed to sustain the economy. War damage has reduced the railroads to shuttling operations and, despite heavy government subsidy, their operation will continue to be unprofitable. Waterways are underused and should be carrying more traffic, particularly on the water routes between Saigon and the food-producing Delta. The transport system has assets that exceed the prospective level of peacetime demand. Major post-war investment probably will be centered in the roads and waterways, the most efficient transport modes.

Note: Comments and queries regarding this publication are welcomed. They may be directed to Mr. [redacted] of the Office of Economic Research,

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Highways

2. The mainstay of South Vietnam's transportation system in recent years has been the 20,000-kilometer road network. Highways in South Vietnam have been fairly well developed since French colonial days, and -- despite the destruction of war -- have been extensively repaired and rehabilitated with US aid. Currently, the system has adequate mileage, and during the next few years most improvement probably will go into maintaining rather than extending the network.

3. The network generally is laid out in a north-south pattern centered on Saigon, the major port and hub of economic activity. Highways provide access to more regions of the country than any other mode and carry most of the freight moved by the transport system. For administrative purposes, highways are classified as national, inter-provincial, provincial, and rural roads -- generally reflecting the type of construction. Most national and about half of the inter-provincial roads are surfaced with asphalt; in all, some 5,500 kilometers of road are paved. The system of classified roads measures almost 14,500 kilometers -- some 70% of the total.

Unimproved roads and trails, traditionally maintained by the villages, and city streets compose the remainder.

4. The most important road in the country is National Highway 1, a north-south coastal route linking Saigon with the North Vietnamese border (see the map). A second north-south route -- National Highway 14 -- roughly parallels the coastal route and extends north from Chou Thanh (some 80 kilometers north of Saigon) via Ban Me Thuot, Pleiku, and Kontum and joins the coastal route about 19 kilometers south of Da Nang. Another key road is National Highway 4 which connects the agricultural area of the Mekong Delta with the heavily populated Saigon area and passes through or near several of the larger cities in the Delta, including My Tho, Vinh Long, Can Tho, Khanh Hung, and Quang Long.

5. The government does not regularly publish data on tonnage carried by motor vehicles. Data published by the Ministry of Public Works in 1964 and the increased use of trucks since then suggest that most -- perhaps 90% -- of the tonnage carried by all modes may be moving by motor vehicles. This increased use of the road network is reflected in truck registrations, which climbed from 30,636 in

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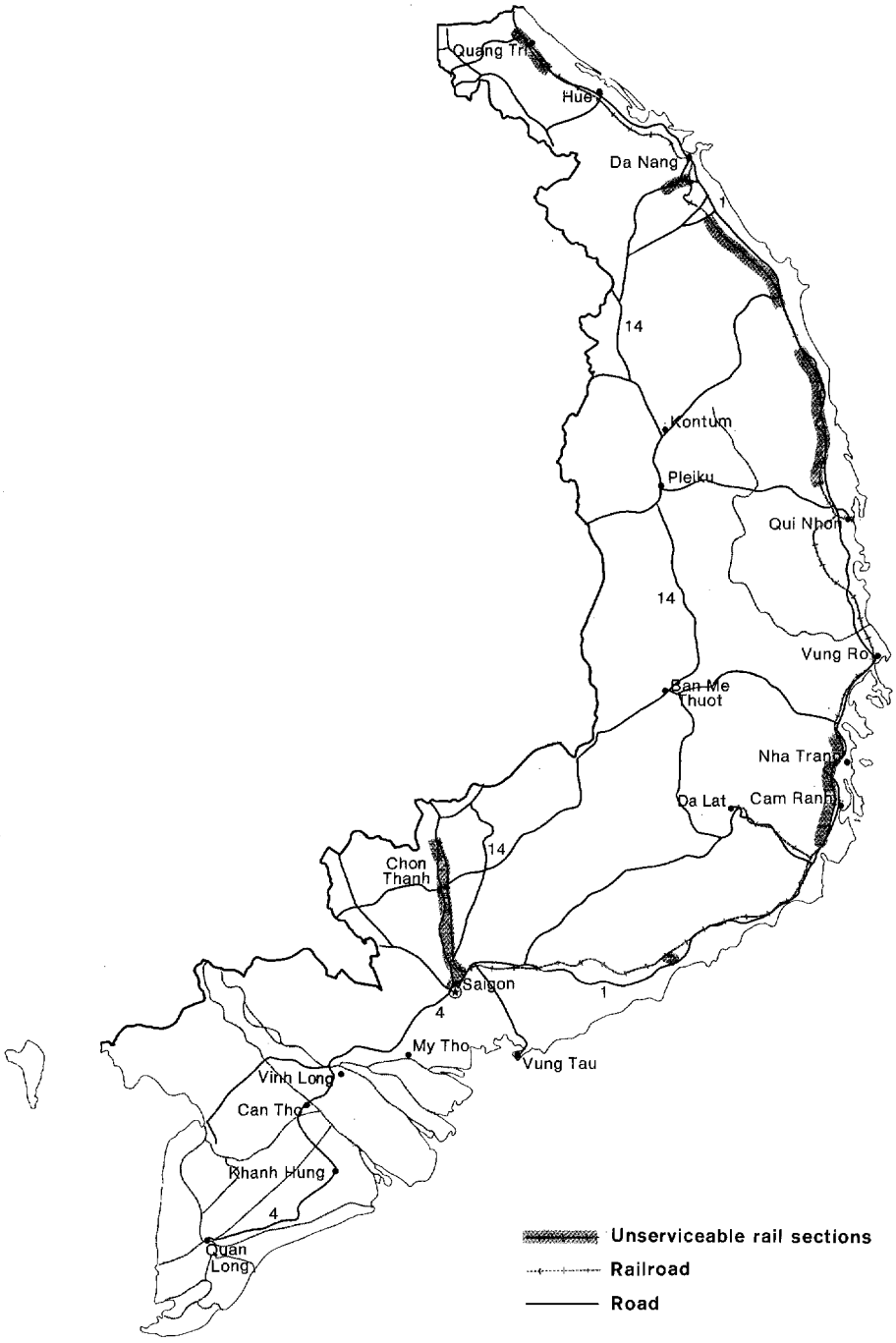

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1964 to nearly 100,000 in 1972. Past upgrading of roads is now proving to be a mixed blessing for the South Vietnamese because the extended network must be maintained. The overloading of vehicles -- a vexing problem for years -- has contributed to a high annual cost of maintenance.

Railroads

6. The railroad system in South Vietnam was built by the French. Before World War II the system linked Saigon and Hanoi and also connected with the Chinese rail network. Currently consisting of nearly 1,300 kilometers of meter-guage (3' 3-3/8") single-track lines, only about half of the system is available for service because of war and storm damage.[1] Operated by the government-owned South Vietnam National Railway (SVNR), the network has no international connection or electrified lines. The declining use of the rail system is reflected in total ton-kilometers moved, which dropped from 127 million metric ton-kilometers in 1964 to only 38 million ton-kilometers in 1971. Traffic declined further in 1972 with only 6 million ton-

1. Although enemy activity has been heavy against the railroad, the greatest damage was caused by floods in 1964. Many sections of rail and numerous bridges washed out have never been repaired.

kilometers through September, a decrease of 75% from the same period in 1971.

7. The SVNR has made some progress in modernizing its inventory of railroad equipment. In 1970, more than 90% of the total train-kilometers of traffic were performed by diesel traction, compared with 67% in 1967. In 1973 the inventory consisted of 65 locomotives (only 10 of which are old steam engines) and 1,300 pieces of rolling stock. Railroad equipment has been imported from the United States, Japan, West Germany, France, and Switzerland. Repair facilities have been upgraded in recent years with new equipment and are adequate for current requirements.

8. The SVNR is heavily subsidized by the government, and the post-war years are likely to be difficult ones for the rail system. In recent years it has been hauling largely military-related cargoes: a study by the Directorate of Railways in 1969 estimated that about 95% of its freight revenue was generated from military cargo. This type of traffic will of course stop when the war ends, and at that time the rails will face stiff competition for freight from a much improved National Highway 1 and from coastal shipping. To be profitable

in the post-war period the railroad system would need long-haul, bulk, high-tariff cargo, but there is little of this type of cargo available in South Vietnam, so long as trade between North and South Vietnam is lacking.

9. The SVNR system originally was linked with lines in the PRC. Railroads in North Vietnam continue to maintain this connection, but the link between North and South Vietnam has been severed for many years. Also, the system in South Vietnam has the same meter gauge as the interconnected systems of Thailand, Cambodia,[2] and Malaysia. The South Vietnamese system could be linked to these systems by laying 260 kilometers of new track between Saigon and Phnom Penh. In a political climate encouraging regional development, a connecting rail system would be of economic value to South Vietnam and the other countries involved. Current political realities, however, suggest that chances for such an international rail connection are remote, at least for some years.

2. Currently the link between Thailand and Phnom Penh is severed due to war damage.

Inland Waterways and Coastal Shipping

10. The Vietnamese have always made extensive use of natural waterways and man-made canals, most of the latter built by the French during 1915-30. Currently, South Vietnam has about 4,800 kilometers of navigable inland waterways, 80% of which are located in the Mekong Delta. The area south and west of Saigon is laced with waterways used extensively to transport people and cargo, principally rice. Traffic declined in the 1960s primarily because of the lack of internal security, but this trend has been reversed in recent years.

11. Although the fleet of inland watercraft is extensive, an accurate census is not available -- in some provinces a census has never been made. The following tabulation lists registrations as of December 1970 (many small craft are not registered, thus not counted):

	Number of Craft
Total	**68,901**
Sailing vessels	35,286
Less than 50 tons	35,243
50 to 100 tons	25
101 to 160 tons	18
Steamboats and motorized vessels	33,615
Less than 50 tons	33,493
50 to 100 tons	89
101 to 160 tons	33

12. Maintenance of the inland waterway system has been neglected for several decades, resulting in a backlog of required dredging that exceeds 50 million cubic meters (cu. m.). Nevertheless, dredging has increased in recent years. Dredging in 1971 increased 280% over 1970 (an increase from 820,000 cu. m. to 3.1 million cu. m.). The dredging of the navigable waterways, however, is only a part of the total dredging requirement. A greater volume of dredging is required for land fill for building sites, urban expansion, agricultural water control, and for the production of sand for use as a building material. In recent years a far greater effort has gone toward land reclamation projects than for maintenance of the waterways.

13. The current level of waterway dredging can do little more than stay abreast with annual maintenance. Annual silting is estimated at at least 2 million cu. m. The problem has been exascerbated in recent years because of the defoliation of vegetation along navigable waterways and by wave action caused by the higher horsepower craft now plying the waterways. As the war winds down, a greater effort probably will be made to improve the waterway system. Engineering and hydrological

studies have been conducted by private companies, the US armed forces, AID, and the United Nations. Although many of the plans have been deferred, the potential for an improved system is there: waterway traffic is cheaper than truck traffic and the Delta is not served by the rail system.

14. Coastal shipping routes extend north from Saigon, most of the trade being carried on small motorized junks of 50-100 tons. Tonnage carried by coastal vessels became more important in the 1960s when internal security conditions curtailed movement by other modes. This trend has been reversed somewhat in recent years as security has improved and as cargoes delivered by international shipping, which formerly moved through the port of Saigon and thence on coasters to other ports, has been delivered directly to ports other than Saigon. The heaviest coastal traffic is between Saigon, Nha Trang, Qui Nhon, and Da Nang. The tonnage carried increased to 861,000 metric tons in 1969 -- more than three times the 1962 total. However, tonnage has fallen off since 1969 because of declining coastal movement of rice and gasoline.

Maritime Ports and Merchant Marine

15. During the 1960s, South Vietnam's ports underwent extremely rapid development because of growing military logistic requirements. This trend has been reversed during the past year, and some port facilities have been removed by the departing US military. In 1959, South Vietnam had one major port -- Saigon -- with a rated capacity of 8,400 tons per day. The only other port of any size was at Da Nang, which was rated at 2,000 tons per day. In 1972, Saigon's daily capacity had climbed to 14,800 tons and Da Nang's to 12,250. New facilities had been built at Cam Ranh Bay (6,700 tons per day), Qui Nhon (6,300 tons per day), Vung Tau (2,550 tons per day), and Vung Ro (2,000 tons per day). The capacity of all ports except Saigon is being reduced by the removal of some portable piers and other structures. In fact, Vung Ro has been completely dismantled and the larger ports of Da Nang, Cam Ranh Bay, and Qui Nhon are being cut back but will probably retain essential port services.

16. The merchant fleet of South Vietnam is small, with a total deadweight capacity of 24,000 tons, and consisting of only six freighters of more than 1,000 gross register tons. These ships were

built overseas and were purchased in used condition. (The largest -- the Thuong Tin, built in 1957 -- has a capacity of 3,666 deadweight tons.)

Air Transport

17. Commercial aviation began in South Vietnam in the early 1930s when Air Orient (Air France) started air service between France and Vietnam. The country's favorable location helped it to develop into a hub of air transport in Southeast Asia. The war since 1960, however, provided the biggest impetus for the substantial growth in both domestic and international air traffic. South Vietnam's civil air service includes both domestic and international operations by the national airline, Air Vietnam, and by nine foreign carriers. Air Vietnam, the Republic of Vietnam Air Force, the US Air Force, and foreign contract airlines have carried food, heavy machinery, farm products, war materiel, and other items normally moved by land or water. Air service has also provided a means of passenger travel to areas of the country where rail and highway services have been severed or curtailed. The high levels of air traffic are in large part due to the low fare structure -- domestic passenger traffic in South Vietnam is

among the least expensive in the world. Air Vietnam, the country's only scheduled airline, links Saigon with 23 other South Vietnamese cities. There are more than 140 weekly domestic flights of DC-3s and DC-4s, ranging from two to more than 20 flights per week between individual cities. The growth in air traffic between 1960 and 1969 and the decline thereafter as internal security improved are shown in the following tabulation which is based on departure data by airport:

	Flights	Passengers
1960	7,066	56,288
1965	43,944	544,497
1966	70,089	655,337
1967	104,934	941,129
1968	107,674	1,041,458
1969	120,954	1,324,888
1970	94,094	1,261,967
1971	42,582	866,657
1972[1]	35,000	665,000

1. Estimate, based on data through July 1972 from the Directorate of Civil Aviation.

18. Air Vietnam is also a regional carrier and flies to Laos, Cambodia, Taiwan, Japan, the Philippines, Singapore, Malaysia, Hong Kong, and

Thailand. Air Vietnam's aircraft inventory consists of three Boeing 727s, two DC-6s, 15 DC-3s and DC-4s, and four smaller planes.

19. Air transport has been developed in South Vietnam far beyond that of most other less developed countries. A return to a peacetime economy probably would result in a sharp reversal of this trend, particularly in domestic air transport. Despite the heavy demand for air transport, Air Vietnam has operated at a loss for many years. It is heavily labor-intensive, having a payroll of 3,500 persons -- including 35 Vietnam air force pilots and 29 civilian pilots, 15 of them foreigners. Despite this and other difficulties, Air Vietnam has the potential to become a profitable regional carrier. It owns and operates the large maintenance hangars and repair facilities at Saigon's Tan Son Nhut Airport. The airline provides maintenance services for the South Vietnamese air force as well as foreign airlines. As internal security improves, however, the airline will have to scale down operations, increase fares, and cut costs.

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